# Prostate Cancer:
## Can We Reduce Mortality and Preserve Quality of Life?

*AT-A-GLANCE*

*1997*

*"It is important that we move toward the development of health messages that reflect the best medical knowledge available to date on prostate cancer to meet the information needs of primary care clinicians and of the public."*

*David Satcher, MD, PhD*
*Director*
*Centers for Disease Control and Prevention*

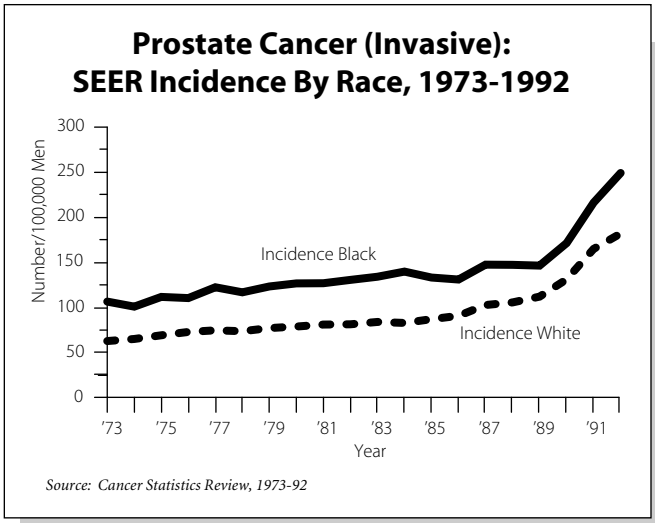
**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

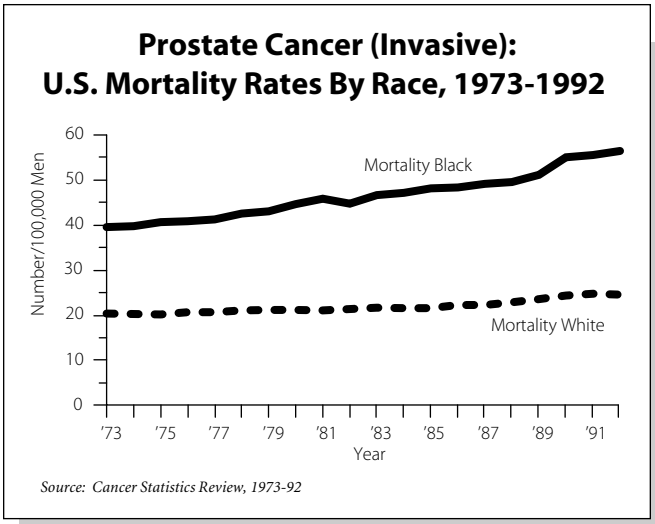
CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

## Prostate Cancer

Prostate cancer is the most commonly diagnosed form of nondermatologic cancer among men in the United States and is second only to lung cancer as a cause of cancer-related death. The American Cancer Society (ACS) estimates that 334,500 new cases of prostate cancer will be diagnosed and that approximately 41,800 men will die of the disease in 1997. Prostate cancer occurs at an age when other medical conditions, such as heart disease and stroke, may contribute significantly to the cause of death. Thus, the number of men who will die *with* prostate cancer rather than *of* it is unknown.

From 1973 to 1992, the incidence of prostate cancer in the United States increased from 64 to 187 per 100,000 persons, and the death rate rose by nearly 23 percent. Increased screening and detection have likely contributed to the recent rise in the incidence of prostate cancer. For example, cancer is often detected incidentally in patients undergoing surgery to treat benign enlargement of the prostate, a common condition among older men. More frequent use of new diagnostic methods, such as blood testing, may also have increased the number of diagnosed cases.




## Early Detection

Preventable risk factors for prostate cancer are unknown, and effective measures to prevent the occurrence of this disease do not currently exist. Although one proposed method to reduce the risk of death from prostate cancer is through screening and early detection, health professionals have not come to a consensus on early detection guidelines. To date, the scientific evidence has been insufficient to determine if screening for prostate cancer reduces mortality or if treatment of early disease is more effective than no treatment in prolonging a patient's life. Currently, health practitioners cannot accurately determine which cancers will progress to become clinically significant and which will not. Thus, widespread screening and testing for early detection of prostate cancer are not scientifically justified at this time.

Professional medical organizations are divided on the issue of screening for prostate cancer. The U.S. Preventive Services Task Force (USPSTF) recommends against routine screening, and the Centers for Disease Control and Prevention (CDC) supports the USPSTF recommendations. The ACS and the American Urological Association (AUA) recommend an annual DRE examination and PSA measurement beginning at age 50 years. They also recommend that screening start at a younger age for men of African descent and for men with a family history of prostate cancer. The AUA suggests that these high risk groups begin testing at age 40 years.

Two methods for detecting prostate cancer are currently available to clinicians:

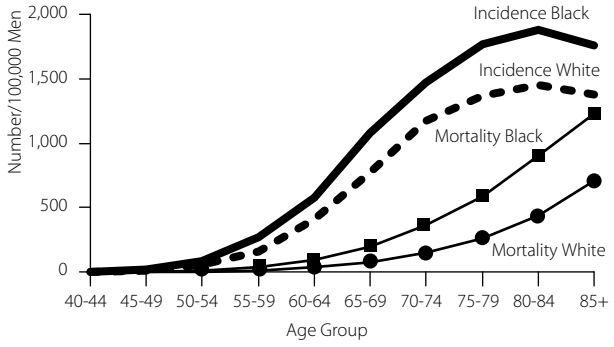
**Digital Rectal Exam (DRE)** has been used for years as a screening test for prostate cancer. However, its ability to detect prostate cancer when it is present is limited. Small tumors often form in portions of the prostate that cannot be reached on a DRE. Clinicians may also have difficulty distinguishing between benign abnormalities and prostate cancer, and the interpretation and results of the examination may vary with the experience of the examiner.

The **prostate-specific antigen (PSA)** is a blood test that is popular with many clinicians, but medical consensus on its use and interpretation has not been reached. PSA is an enzyme measured in the blood that rises in the presence of prostate abnormalities and naturally as men age. Thus, it is difficult to differentiate between prostate cancer, benign growth of the prostate—a condition referred to as benign prostatic hypertrophy (BPH)—and other conditions of the prostate, such as prostatitis. About 50 percent of men with BPH have elevated PSA levels and may receive additional diagnostic tests for cancer, such as a biopsy and transrectal ultrasound. Many of the men who receive these additional diagnostic tests are not diagnosed with prostate cancer. PSA also fails to detect some prostate cancers—about 20 percent of patients with biopsy-proven prostate cancer have PSA levels that are within normal range.

## Who is at Risk?

Prostate cancer is most common among men aged 65 years and older. Men in this age group account for about 80 percent of clinically diagnosed prostate cancers. From 1973 to 1992, the death rate for African-American men, who already have one of the highest incidences of prostate cancer in the world, rose by 41 percent. At all ages, African-American men tend to be diagnosed with the disease at later stages, and they die from prostate cancer more often than do white men. The reasons for the greater incidence and mortality among African-American men are unknown.

**Prostate Cancer (Invasive): Average Annual Age-Specific SEER Incidence and U.S. Mortality Rates By Race, 1988-1992**




*Source: Cancer Statistics Review, 1973-92*
*Rate is age-adjusted to 1970 U.S. population*

## Treatment Options

Decisions regarding appropriate treatment options for men with prostate cancer are based on the stage of the cancer at the time of diagnosis. Patients with early stage cancer that is confined to the prostate have several treatment options. Three treatments are currently in use for cancers thought to be confined to the prostate:

**Radical prostatectomy,** or complete surgical removal of the prostate, is frequently used for patients less than 70 years old who are otherwise in good health. Physicians rarely suggest radical prostatectomy if cancer has spread to pelvic lymph nodes or a distant site. Complications of radical prostatectomy may be short- or long-term; these complications can include impotence and urinary incontinence. The risk for these complications increases with age and also depends on the amount of damage to nerve and blood supplies that occurs during the surgical procedure. Between 5 and 19 percent of men become incontinent, and from 24 to 62 percent may become sexually impotent. Most men who undergo a radical prostatectomy experience at least a partial decrease or decline in potency. Currently, data from randomized clinical trials are not available to provide definitive evidence that this surgical procedure decreases mortality or prolongs life.

**Radiation therapy,** or treatment of the tumor site with low levels of radiation, is usually used only for men with cancer that is confined to the prostate or to the surrounding tissue. Some side effects of radiation therapy, which can include acute inflammation of the bladder, rectum, and intestines, are generally reversible. However, chronic inflammation can result in strictures that require surgical intervention in 0.5 to 2 percent of men treated with radiation therapy. Following radiation therapy, from 25 to 44 percent of men experience some degree of sexual impotence. Incontinence also occurs in 0.5 to 7 percent of men treated with radiation.

Men with prostate cancer may also choose to have no treatment initially. This option is referred to as **watchful waiting.** When this option is chosen, the tumor is evaluated periodically for changes that suggest rapid growth. Recent studies have found that watchful waiting may be an acceptable alternative management option for some men, particularly for older men with small low-grade tumors that are unlikely to spread.

Patients with cancer that has spread beyond the prostate gland may receive radiation and hormonal therapies to inhibit further progression of the cancer, but most metastatic tumors eventually become resistant to hormonal therapy. Some patients with advanced metastatic disease may be considered for participation in clinical trials of experimental therapies.

Because of limitations in current medical technology, accurate determination of prostate cancer is difficult. As a result, about 50% of men thought to have early stage cancer have more extensive disease. Patient outcomes and the quality of life after treatment are influenced by the patient's age, coexisting medical conditions, and the aggressiveness of the tumor.

## State Partnerships

In 1993, Congress authorized the CDC to work with existing cancer control efforts in state health departments to develop state-based demonstration projects for prostate cancer. Fiscal year 1996 funding for CDC prostate cancer initiatives was $4.6 million. Currently established in central Harlem in New York City and in rural northwest Louisiana, the demonstration projects have obtained information on knowledge, attitudes, and practices of men and their physicians that is crucial for designing early detection programs. Both projects have focused on the highest risk group—African-American men. Results from these projects will be available in 1997.

Two other projects are ongoing in Massachusetts and Missouri to further refine and validate methods and instruments for assessing knowledge, attitudes, beliefs, and practices related to prostate cancer screening.

In the absence of scientific consensus of the effectiveness of prostate cancer screening in reducing mortality, a significant challenge facing state public health agencies is to determine how best to balance the public's need for and interest in prostate cancer programs with useful prostate cancer health communication messages and activities. In October 1996, CDC cosponsored the State Issues Workshop on Prostate Cancer in which state and territorial chronic disease directors addressed the complex issues related to prostate cancer control. During the workshop, participants shared experiences, identified roles and strategies for public health agencies, and identified capacity building needs of public health agencies. In response to the challenges identified at the workshop, CDC established a multidisciplinary work group that will use health communications strategies and methods to craft health messages for men and their families about prostate cancer screening and early detection.

## Prevention Center Activities

CDC currently supports two programs at Prevention Centers, one at the University of California at Berkeley and a second at the Harlem Center for Health Promotion and Disease Prevention in conjunction with the New York State Department of Health and Columbia University. These projects are designed to assess the relationship between coexisting health conditions and to determine how these conditions may affect the risk of death among men diagnosed with prostate cancer. An important component of these projects is to determine how many men die of prostate cancer and how many die with the disease.

## International Conference

In September 1995, CDC held an International Conference on Prostate Cancer Screening, Early Detection, and Control. The conference provided a forum for national and international prostate cancer experts to review current information about early detection and disease management. A broad range of health professionals and specialists from the fields of urology, internal medicine, oncology, radiology, family medicine, health administration, pathology, economics, biostatistics, and epidemiology participated in the conference. Although conference participants disagreed on such issues as the cost-effectiveness of screening and early detection and the efficacy of treatments, several consistent themes emerged:

- Prostate cancer is a major cause of illness and death among U.S. men.
- Medical tests can detect prostate cancer at early stages, but the effectiveness of screening and early detection in improving outcomes are still unproven.
- Men who are considering screening should be fully informed of the potential risks, benefits, and costs of being screened, of not being screened, and of possible diagnostic or treatment procedures.
- Men diagnosed with prostate cancer should be fully informed of the potential risks, benefits, and costs of all treatment and management options.
- Support and survivor groups can play important roles in assisting prostate cancer patients before and after treatment decisions.
- Special efforts should be made to increase African-American men's participation in cancer-related research and to improve their knowledge and understanding of the disease.
- The definitions and terminology used in research and in counseling patients need to be standardized.

The most appropriate and scientifically rigorous way to answer the controversial questions related to early detection and treatment is through randomized controlled trials (RCT). The NCI has already begun the Prostate, Lung, Colorectal, and Ovarian Cancer (PLCO) Screening Trial, which has been designed, in part, to determine whether screening for prostate cancer actually reduces mortality. The CDC is funding efforts at the Henry Ford Health System to recruit older African-American men to the PLCO Trial. The Veterans Administration is undertaking the Prostate Cancer Intervention Versus Observation Trial (PIVOT), an RCT designed to determine whether radical prostatectomy or watchful waiting is preferable for managing prostate cancer in its early stages. In Europe, RCTs have been initiated to determine whether treatment of early, localized prostate cancer extends a man's symptom-free lifetime.

## Psychological Issues

Physicians have become increasingly aware of the psychosocial aspects of prostate cancer and its treatment. Treatment has a direct and immediate effect on the patient and his spouse and influences how they will live their lives. Many community education and support programs are available to help men and their partners make informed decisions that will suit their needs, desires, and lifestyles. Health professionals are realizing that the question is not merely how we can save a life, but how we can preserve quality of life as well.

**For more information or additional copies of this document, please contact the Centers for Disease Control and Prevention,**
**National Center for Chronic Disease Prevention and Health Promotion, Mail Stop K-64,**
**4770 Buford Highway NE, Atlanta, GA 30341-3724, (770) 488-4751.**
**cancerinfo@cdc.gov**
**http://www.cdc.gov/nccdphp/dcpc**